

SEQUENCE LISTING

<110> Zhou, Ming-Ming
Aggarnal, Aneel K

<120> METHODS OF IDENTIFYING MODULATORS OF BROMODOMAINS

<130> 2459-1-003

<140> UNASSIGNED

<141> 2000-02-22

<160> 44

<170> PatentIn Ver. 2.0

<210> 1

<211> 3014

<212> DNA

<213> Homo sapiens

<400> 1

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<210> 2

<211> 832

<212> PRT

<213> Homo sapiens

<400> 2

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Gly Ala Gly Ala Gly Pro Gly Ala Leu Pro Pro Gln Pro Ala Ala Leu
      20              25              30

```

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Pro Pro Ala Pro Pro Gln Gly Ser Pro Cys Ala Ala Ala Ala Gly Gly
      35              40              45

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Ser Gly Ala Cys Gly Pro Ala Thr Ala Val Ala Ala Ala Gly Thr Ala
      50              55              60

```

```

Glu Gly Pro Gly Gly Gly Gly Ser Ala Arg Ile Ala Val Lys Lys Ala
      65              70              75             80

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```

Gln Leu Arg Ser Ala Pro Arg Ala Lys Lys Leu Glu Lys Leu Gly Val

```

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Tyr Ser Ala Cys Lys Ala Glu Glu Ser Cys Lys Cys Asn Gly Trp Lys					
	100		105		110
Asn Pro Asn Pro Ser Pro Thr Pro Pro Arg Ala Asp Leu Gln Gln Ile					
	115		120		125
Ile Val Ser Leu Thr Glu Ser Cys Arg Ser Cys Ser His Ala Leu Ala					
	130		135		140
Ala His Val Ser His Leu Glu Asn Val Ser Glu Glu Glu Met Asn Arg					
	145		150		155 160
Leu Leu Gly Ile Val Leu Asp Val Glu Tyr Leu Phe Thr Cys Val His					
		165		170	175
Lys Glu Glu Asp Ala Asp Thr Lys Gln Val Tyr Phe Tyr Leu Phe Lys					
		180		185	190
Leu Leu Arg Lys Ser Ile Leu Gln Arg Gly Lys Pro Val Val Glu Gly					
	195		200		205
Ser Leu Glu Lys Lys Pro Pro Phe Glu Lys Pro Ser Ile Glu Gln Gly					
	210		215		220
Val Asn Asn Phe Val Gln Tyr Lys Phe Ser His Leu Pro Ala Lys Glu					
	225		230		235 240
Arg Gln Thr Ile Val Glu Leu Ala Lys Met Phe Leu Asn Arg Ile Asn					
		245		250	255
Tyr Trp His Leu Glu Ala Pro Ser Gln Arg Arg Leu Arg Ser Pro Asn					
		260		265	270
Asp Asp Ile Ser Gly Tyr Lys Glu Asn Tyr Thr Arg Trp Leu Cys Tyr					
	275		280		285
Cys Asn Val Pro Gln Phe Cys Asp Ser Leu Pro Arg Tyr Glu Thr Thr					
	290		295		300
Gln Val Phe Gly Arg Thr Leu Leu Arg Ser Val Phe Thr Val Met Arg					
	305		310		315 320
Arg Gln Leu Leu Glu Gln Ala Arg Gln Glu Lys Asp Lys Leu Pro Leu					
		325		330	335
Glu Lys Arg Thr Leu Ile Leu Thr His Phe Pro Lys Phe Leu Ser Met					

340	345	350
Leu Glu Glu Glu Val Tyr Ser Gln Asn Ser Pro Ile Trp Asp Gln Asp		
355	360	365
Phe Leu Ser Ala Ser Ser Arg Thr Ser Gln Leu Gly Ile Gln Thr Val		
370	375	380
Ile Asn Pro Pro Pro Val Ala Gly Thr Ile Ser Tyr Asn Ser Thr Ser		
385	390	400
Ser Ser Leu Glu Gln Pro Asn Ala Gly Ser Ser Ser Pro Ala Cys Lys		
	405	415
Ala Ser Ser Gly Leu Glu Ala Asn Pro Gly Glu Lys Arg Lys Met Thr		
	420	430
Asp Ser His Val Leu Glu Glu Ala Lys Lys Pro Arg Val Met Gly Asp		
	435	445
Ile Pro Met Glu Leu Ile Asn Glu Val Met Ser Thr Ile Thr Asp Pro		
	450	460
Ala Ala Met Leu Gly Pro Glu Thr Asn Phe Leu Ser Ala His Ser Ala		
465	470	480
Arg Asp Glu Ala Ala Arg Leu Glu Glu Arg Arg Gly Val Ile Glu Phe		
	485	495
His Val Val Gly Asn Ser Leu Asn Gln Lys Pro Asn Lys Lys Ile Leu		
	500	510
Met Trp Leu Val Gly Leu Gln Asn Val Phe Ser His Gln Leu Pro Arg		
	515	525
Met Pro Lys Glu Tyr Ile Thr Arg Leu Val Phe Asp Pro Lys His Lys		
	530	540
Thr Leu Ala Leu Ile Lys Asp Gly Arg Val Ile Gly Gly Ile Cys Phe		
545	550	560
Arg Met Phe Pro Ser Gln Gly Phe Thr Glu Ile Val Phe Cys Ala Val		
	565	575
Thr Ser Asn Glu Gln Val Lys Gly Tyr Gly Thr His Leu Met Asn His		
	580	590
Leu Lys Glu Tyr His Ile Lys His Asp Ile Leu Asn Phe Leu Thr Tyr		

595	600	605
Ala Asp Glu Tyr Ala Ile Gly Tyr Phe Lys Lys Gln Gly Phe Ser Lys		
610	615	620
Glu Ile Lys Ile Pro Lys Thr Lys Tyr Val Gly Tyr Ile Lys Asp Tyr		
625	630	635
Glu Gly Ala Thr Leu Met Gly Cys Glu Leu Asn Pro Arg Ile Pro Tyr		
	645	650
Thr Glu Phe Ser Val Ile Ile Lys Lys Gln Lys Glu Ile Ile Lys Lys		
	660	665
Leu Ile Glu Arg Lys Gln Ala Gln Ile Arg Lys Val Tyr Pro Gly Leu		
	675	680
Ser Cys Phe Lys Asp Gly Val Arg Gln Ile Pro Ile Glu Ser Ile Pro		
	690	700
Gly Ile Arg Glu Thr Gly Trp Lys Pro Ser Gly Lys Glu Lys Ser Lys		
705	710	715
Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser Ile Leu		
	725	730
Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu Pro Val		
	740	745
Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Phe Pro Met		
	755	760
Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr Val Ser		
	770	775
Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn Cys Lys		
785	790	795
Glu Tyr Asn Ala Ala Glu Ser Glu Tyr Tyr Lys Cys Ala Asn Ile Leu		
	805	810
Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly Leu Ile Asp Lys		
	820	825
		830

<210> 3
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: peptide

<220>
<221> VARIANT
<222> (2)
<223> It represents 2 to 3 undesignated amino acids.
They can be any amino acids.

<220>
<221> VARIANT
<222> (4)
<223> It represents 5 to 8 undesignated amino acids.
They can be any amino acids.

<220>
<221> VARIANT
<222> (6)
<223> It represents one undesignated amino acid. It can
be any amino acid.

<220>
<221> VARIANT
<222> (9)
<223> It represents 5 undesignated amino acids. They can
be any amino acids.

<220>
<221> VARIANT
<222> (5)
<223> It can be any amino acid from the group of: P, K,
or H.

<220>
<221> VARIANT
<222> (8)
<223> It can be any amino acid from the group of: Y, F,
or H.

<220>
<221> VARIANT
<222> (11)
<223> It can be any amino acid from the group of: M, I,

or V.

<400> 3

Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Pro Xaa Asp
1 5 10

<210> 4

<211> 12

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: peptide

<220>

<221> SITE

<222> (6)

<223> It is acetyl-lysine.

<400> 4

Ile Ser Tyr Gly Arg Xaa Lys Arg Arg Gln Arg Arg
1 5 10

<210> 5

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: peptide.

<220>

<221> SITE

<222> (8)

<223> It is acetyl-lysine.

<400> 5

Ala Arg Lys Ser Thr Gly Gly Xaa Ala Pro Arg Lys Gln Leu
1 5 10

<210> 6

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: peptide

<220>

<221> SITE

<222> (8)

<223> It is acetyl-lysine.

<400> 6

Gln Ser Thr Ser Arg His Lys Xaa Leu Met Phe Lys Thr Glu
1 5 10

<210> 7

<211> 110

<212> PRT

<213> Homo sapiens

<400> 7

Ser Lys Glu Pro Arg Asp Pro Asp Gln Leu Tyr Ser Thr Leu Lys Ser
1 5 10 15

Ile Leu Gln Gln Val Lys Ser His Gln Ser Ala Trp Pro Phe Met Glu
20 25 30

Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr Glu Val Ile Arg Ser
35 40 45

Pro Met Asp Leu Lys Thr Met Ser Glu Arg Leu Lys Asn Arg Tyr Tyr
50 55 60

Val Ser Lys Lys Leu Phe Met Ala Asp Leu Gln Arg Val Phe Thr Asn
65 70 75 80

Cys Lys Glu Tyr Asn Ala Pro Glu Ser Glu Tyr Tyr Lys Cys Ala Asn
85 90 95

Ile Leu Glu Lys Phe Phe Phe Ser Lys Ile Lys Glu Ala Gly
100 105 110

<210> 8

<211> 110

<212> PRT

<213> Homo sapiens

<400> 8

Gly Lys Glu Leu Lys Asp Pro Asp Gln Leu Tyr Thr Thr Leu Lys Asn

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Leu	Leu	Ala	Gln	Ile	Lys	Ser	His	Pro	Ser	Ala	Trp	Pro	Phe	Met	Glu
		20						25					30		
Pro	Val	Lys	Lys	Ser	Glu	Ala	Pro	Asp	Tyr	Tyr	Glu	Val	Ile	Arg	Phe
		35					40					45			
Pro	Ile	Asp	Leu	Lys	Thr	Met	Thr	Glu	Arg	Leu	Arg	Ser	Arg	Tyr	Tyr
		50				55					60				
Val	Thr	Arg	Lys	Leu	Phe	Val	Ala	Asp	Leu	Gln	Arg	Val	Ile	Ala	Asn
	65				70					75					80
Cys	Arg	Glu	Tyr	Asn	Pro	Pro	Asp	Ser	Glu	Tyr	Cys	Arg	Cys	Ala	Ser
				85					90					95	
Ala	Leu	Glu	Lys	Phe	Phe	Tyr	Phe	Lys	Leu	Lys	Glu	Gly	Gly		
			100					105					110		

<210> 9
 <211> 109
 <212> PRT
 <213> Tetrahymena thermophila

<400> 9

Leu	Lys	Lys	Ser	Lys	Glu	Arg	Ser	Phe	Asn	Leu	Gln	Cys	Ala	Asn	Val
1				5					10					15	
Ile	Glu	Asn	Met	Lys	Arg	His	Lys	Gln	Ser	Trp	Pro	Phe	Leu	Asp	Pro
		20						25					30		
Val	Asn	Lys	Asp	Asp	Val	Pro	Asp	Tyr	Tyr	Asp	Val	Ile	Thr	Asp	Pro
		35					40					45			
Ile	Asp	Ile	Lys	Ala	Ile	Glu	Lys	Lys	Leu	Gln	Asn	Asn	Gln	Tyr	Val
	50					55					60				
Asp	Lys	Asp	Gln	Phe	Ile	Lys	Asp	Val	Lys	Arg	Ile	Phe	Thr	Asn	Ala
	65				70					75					80
Lys	Ile	Tyr	Asn	Gln	Pro	Asp	Thr	Ile	Tyr	Tyr	Lys	Ala	Ala	Lys	Glu
			85					90						95	
Leu	Glu	Asp	Phe	Val	Glu	Pro	Tyr	Leu	Thr	Lys	Leu	Lys			
			100					105							

<210> 10
 <211> 109
 <212> PRT
 <213> *Saccharomyces cerevisiae*

<400> 10
 Ala Gln Arg Pro Lys Arg Gly Pro His Asp Ala Ala Ile Gln Asn Ile
 1 5 10 15
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 Val Asn Lys Glu Glu Val Pro Asp Tyr Tyr Asp Phe Ile Lys Glu Pro
 35 40 45
 Met Asp Leu Ser Thr Met Glu Ile Lys Leu Glu Ser Asn Lys Tyr Gln
 50 55 60
 Lys Met Glu Asp Phe Ile Tyr Asp Ala Arg Leu Val Phe Asn Asn Cys
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 Arg Met Tyr Asn Gly Glu Asn Thr Ser Tyr Tyr Lys Tyr Ala Asn Arg
 85 90 95
 Leu Glu Lys Phe Phe Asn Asn Lys Val Lys Glu Ile Pro
 100 105

<210> 11
 <211> 112
 <212> PRT
 <213> *Homo sapiens*

<400> 11
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 20 25 30
 Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
 35 40 45
 Lys Ser Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60
 Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Ile Trp Leu Met Phe

65

70

75

80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Tyr
 85 90 95

Cys Ser Lys Leu Ser Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
 100 105 110

<210> 12

<211> 112

<212> PRT

<213> Homo sapiens

<400> 12

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
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Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
 20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
 35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
 50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Trp Leu Met Phe
 65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
 85 90 95

Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
 100 105 110

<210> 13

<211> 112

<212> PRT

<213> Mus musculus

<400> 13

Lys Lys Ile Phe Lys Pro Glu Glu Leu Arg Gln Ala Leu Met Pro Thr
1 5 10 15

Leu Glu Ala Leu Tyr Arg Gln Asp Pro Glu Ser Leu Pro Phe Arg Gln
20 25 30

Pro Val Asp Pro Gln Leu Leu Gly Ile Pro Asp Tyr Phe Asp Ile Val
35 40 45

Lys Asn Pro Met Asp Leu Ser Thr Ile Lys Arg Lys Leu Asp Thr Gly
50 55 60

Gln Tyr Gln Glu Pro Trp Gln Tyr Val Asp Asp Val Arg Leu Met Phe
65 70 75 80

Asn Asn Ala Trp Leu Tyr Asn Arg Lys Thr Ser Arg Val Tyr Lys Phe
85 90 95

Cys Ser Lys Leu Ala Glu Val Phe Glu Gln Glu Ile Asp Pro Val Met
100 105 110

<210> 14

<211> 111

<212> PRT

<213> *Caenorhabditis elegans*

<400> 14

Asp Thr Val Phe Ser Gln Glu Asp Leu Ile Lys Phe Leu Leu Pro Val
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Trp Glu Lys Leu Asp Lys Ser Glu Asp Ala Ala Pro Phe Arg Val Pro
20 25 30

Val Asp Ala Lys Leu Leu Asn Ile Pro Asp Tyr His Glu Ile Ile Lys
35 40 45

Arg Pro Met Asp Leu Glu Thr Val His Lys Lys Leu Tyr Ala Gly Gln
50 55 60

Tyr Gln Asn Ala Gly Gln Phe Cys Asp Asp Ile Trp Leu Met Leu Asp
65 70 75 80

Asn Ala Trp Leu Tyr Asn Arg Lys Asn Ser Lys Val Tyr Lys Tyr Gly

85

90

95

Leu Lys Leu Ser Glu Met Phe Val Ser Glu Met Asp Pro Val Met
 100 105 110

<210> 15

<211> 110

<212> PRT

<213> Homo sapiens

<400> 15

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
 1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
 20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
 35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
 50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
 65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
 85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
 100 105 110

<210> 16

<211> 110

<212> PRT

<213> Mesocricetus auratus

<400> 16

Arg Arg Arg Thr Asp Pro Met Val Thr Leu Ser Ser Ile Leu Glu Ser
 1 5 10 15

Ile Ile Asn Asp Met Arg Asp Leu Pro Asn Thr Tyr Pro Phe His Thr
 20 25 30

Pro Val Asn Ala Lys Val Val Lys Asp Tyr Tyr Lys Ile Ile Thr Arg
 35 40 45

Pro Met Asp Leu Gln Thr Leu Arg Glu Asn Val Arg Lys Arg Leu Tyr
 50 55 60

Pro Ser Arg Glu Glu Phe Arg Glu His Leu Glu Leu Ile Val Lys Asn
 65 70 75 80

Ser Ala Thr Tyr Asn Gly Pro Lys His Ser Leu Thr Gln Ile Ser Gln
 85 90 95

Ser Met Leu Asp Leu Cys Asp Glu Lys Leu Lys Glu Lys Glu
 100 105 110

<210> 17
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 17
 Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
 1 5 10 15

Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
 20 25 30

His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
 35 40 45

Asn Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
 50 55 60

Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
 65 70 75 80

Asn Ser Val Lys Tyr Asn Gly Pro Glu Ser Gln Tyr Thr Lys Thr Ala
 85 90 95

Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
 100 105 110

<210> 18
 <211> 111
 <212> PRT
 <213> Mesocricetus auratus

<400> 18

Leu Leu Asp Asp Asp Asp Gln Val Ala Phe Ser Phe Ile Leu Asp Asn
 1 5 10 15
 Ile Val Thr Gln Lys Met Met Ala Val Pro Asp Ser Trp Pro Phe His
 20 25 30
 His Pro Val Asn Lys Lys Phe Val Pro Asp Tyr Tyr Lys Val Ile Val
 35 40 45
 Ser Pro Met Asp Leu Glu Thr Ile Arg Lys Asn Ile Ser Lys His Lys
 50 55 60
 Tyr Gln Ser Arg Glu Ser Phe Leu Asp Asp Val Asn Leu Ile Leu Ala
 65 70 75 80
 Asn Ser Val Lys Tyr Asn Gly Ser Glu Ser Gln Tyr Thr Lys Thr Ala
 85 90 95
 Gln Glu Ile Val Asn Val Cys Tyr Gln Thr Leu Thr Glu Tyr Asp
 100 105 110

<210> 19
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 19
 Lys Pro Gly Arg Val Thr Asn Gln Leu Gln Tyr Leu His Lys Val Val
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 Met Lys Ala Leu Trp Lys His Gln Phe Ala Trp Pro Phe Arg Gln Pro
 20 25 30
 Val Asp Ala Val Lys Leu Gly Leu Pro Asp Tyr His Lys Ile Ile Lys
 35 40 45
 Gln Pro Met Asp Met Gly Thr Ile Lys Arg Arg Leu Glu Asn Asn Tyr
 50 55 60
 Tyr Trp Ala Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
 65 70 75 80
 Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
 85 90 95
 Gln Thr Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Ser Met Pro
 100 105 110

<210> 20
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 20
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 20 25 30
 Val Asp Ala Ile Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
 35 40 45
 Asn Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
 50 55 60
 Tyr Trp Ser Ala Ser Glu Cys Met Gln Asp Phe Asn Thr Met Phe Thr
 65 70 75 80
 Asn Cys Tyr Ile Tyr Asn Lys Pro Thr Asp Asp Ile Val Leu Met Ala
 85 90 95
 Gln Ala Leu Glu Lys Ile Phe Leu Gln Lys Val Ala Gln Met Pro
 100 105 110

<210> 21
 <211> 111
 <212> PRT
 <213> Drosophila melanogaster

<400> 21
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 1 5 10 15
 Met Lys Val Ile Trp Lys His His Phe Ser Trp Pro Phe Gln Gln Pro
 20 25 30
 Val Asp Ala Lys Lys Leu Asn Leu Pro Asp Tyr His Lys Ile Ile Lys
 35 40 45
 Gln Pro Met Asp Met Gly Thr Ile Lys Lys Arg Leu Glu Asn Asn Tyr
 50 55 60

Tyr Trp Ser Ala Lys Glu Thr Ile Gln Asp Phe Asn Thr Met Phe Asn
65 70 75 80

Asn Cys Tyr Val Tyr Asn Lys Pro Gly Glu Asp Val Val Val Met Ala
85 90 95

Gln Thr Leu Glu Lys Val Phe Leu Gln Lys Ile Glu Ser Met Pro
100 105 110

<210> 22

<211> 109

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 22

Asn Pro Ile Pro Lys His Gln Gln Lys His Ala Leu Leu Ala Ile Lys
1 5 10 15

Ala Val Lys Arg Leu Lys Asp Ala Arg Pro Phe Leu Gln Pro Val Asp
20 25 30

Pro Val Lys Leu Asp Ile Pro Phe Tyr Phe Asn Tyr Ile Lys Arg Pro
35 40 45

Met Asp Leu Ser Thr Ile Glu Arg Lys Leu Asn Val Gly Ala Tyr Glu
50 55 60

Val Pro Glu Gln Ile Thr Glu Asp Phe Asn Leu Met Val Asn Asn Ser
65 70 75 80

Ile Lys Phe Asn Gly Pro Asn Ala Gly Ile Ser Gln Met Ala Arg Asn
85 90 95

Ile Gln Ala Ser Phe Glu Lys His Met Leu Asn Met Pro
100 105

<210> 23

<211> 113

<212> PRT

<213> *Homo sapiens*

<400> 23

Lys Lys Gly Lys Leu Ser Glu Gln Leu Lys His Cys Asn Gly Ile Leu
1 5 10 15

Lys Glu Leu Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr

20	25	30
Lys Pro Val Asp Ala Ser Ala Leu Gly Leu His Asp Tyr His Asp Ile		
35	40	45
Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Glu Asn		
50	55	60
Arg Asp Tyr Arg Asp Ala Gln Glu Phe Ala Ala Asp Val Arg Leu Met		
65	70	75 80
Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala		
85	90	95
Met Ala Arg Lys Leu Gln Asp Val Phe Glu Phe Arg Tyr Ala Lys Met		
100	105	110

Pro

<210> 24
 <211> 113
 <212> PRT
 <213> Homo sapiens

<400> 24
Lys Lys Gly Lys Leu Ser Glu His Leu Arg Tyr Cys Asp Ser Ile Leu
1 5 10 15
Arg Glu Met Leu Ser Lys Lys His Ala Ala Tyr Ala Trp Pro Phe Tyr
20 25 30
Lys Pro Val Asp Ala Glu Ala Leu Glu Leu His Asp Tyr His Asp Ile
35 40 45
Ile Lys His Pro Met Asp Leu Ser Thr Val Lys Arg Lys Met Asp Gly
50 55 60
Arg Glu Tyr Pro Asp Ala Gln Gly Phe Ala Ala Asp Val Arg Leu Met
65 70 75 80
Phe Ser Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Glu Val Val Ala
85 90 95
Met Ala Arg Lys Leu Gln Asp Val Phe Glu Met Arg Phe Ala Lys Met
100 105 110

Pro

<210> 25
<211> 113
<212> PRT
<213> *Drosophila melanogaster*

<400> 25
Asn Lys Glu Lys Leu Ser Asp Ala Leu Lys Ser Cys Asn Glu Ile Leu
1 5 10 15
Lys Glu Leu Phe Ser Lys Lys His Ser Gly Tyr Ala Trp Pro Phe Tyr
20 25 30
Lys Pro Val Asp Ala Glu Met Leu Gly Leu His Asp Tyr His Asp Ile
35 40 45
Ile Lys Lys Pro Met Asp Leu Gly Thr Val Lys Arg Lys Met Asp Asn
50 55 60
Arg Glu Tyr Lys Ser Ala Pro Glu Phe Ala Ala Asp Val Arg Leu Ile
65 70 75 80
Phe Thr Asn Cys Tyr Lys Tyr Asn Pro Pro Asp His Asp Val Val Ala
85 90 95
Met Gly Arg Lys Leu Gln Asp Val Phe Glu Met Arg Tyr Ala Asn Ile
100 105 110

Pro

<210> 26
<211> 113
<212> PRT
<213> *Saccharomyces cerevisiae*

<400> 26
Lys Ser Lys Arg Leu Gln Gln Ala Met Lys Phe Cys Gln Ser Val Leu
1 5 10 15
Lys Glu Leu Met Ala Lys Lys His Ala Ser Tyr Asn Tyr Pro Phe Leu
20 25 30
Glu Pro Val Asp Pro Val Ser Met Asn Leu Pro Thr Tyr Phe Asp Tyr

35	40	45
Val Lys Glu Pro Met Asp Leu Gly Thr Ile Ala Lys Lys Leu Asn Asp		
50	55	60
Trp Gln Tyr Gln Thr Met Glu Asp Phe Glu Arg Glu Val Arg Leu Val		
65	70	75 80
Phe Lys Asn Cys Tyr Thr Phe Asn Pro Asp Gly Thr Ile Val Asn Met		
	85 90	95
Met Gly His Arg Leu Glu Glu Val Phe Asn Ser Lys Trp Ala Asp Arg		
100	105	110

Pro

<210> 27
 <211> 108
 <212> PRT
 <213> Homo sapiens

<400> 27

Met Glu Met Gln Leu Thr Pro Phe Leu Ile Leu Leu Arg Lys Thr Leu		
1	5	10 15
Glu Gln Leu Gln Glu Lys Asp Thr Gly Asn Ile Phe Ser Glu Pro Val		
	20 25	30
Pro Leu Ser Glu Val Pro Asp Tyr Leu Asp His Ile Lys Lys Pro Met		
	35 40	45
Asp Phe Phe Thr Met Lys Gln Asn Leu Glu Ala Tyr Arg Tyr Leu Asn		
50	55	60
Phe Asp Asp Phe Glu Glu Asp Phe Asn Leu Ile Val Ser Asn Cys Leu		
65	70	75 80
Lys Tyr Asn Ala Lys Asp Thr Ile Phe Tyr Arg Ala Ala Val Arg Leu		
	85 90	95
Arg Glu Gln Gly Gly Ala Val Val Arg Gln Ala Arg		
100	105	

<210> 28
 <211> 113

<212> PRT
<213> Homo sapiens

<400> 28

Ser Glu Asp Gln Glu Ala Ile Gln Ala Gln Lys Ile Trp Lys Lys Ala
1 5 10 15

Ile Met Leu Val Trp Arg Ala Ala Ala Asn His Arg Tyr Ala Asn Val
20 25 30

Phe Leu Gln Pro Val Thr Asp Asp Ile Ala Pro Gly Tyr His Ser Ile
35 40 45

Val Gln Arg Pro Met Asp Leu Ser Thr Ile Lys Lys Asn Ile Glu Asn
50 55 60

Gly Leu Ile Arg Ser Thr Ala Glu Phe Gln Arg Asp Ile Met Leu Met
65 70 75 80

Phe Gln Asn Ala Val Met Tyr Asn Ser Ser Asp His Asp Val Tyr His
85 90 95

Met Ala Val Glu Met Gln Arg Asp Val Leu Glu Gln Ile Gln Gln Phe
100 105 110

Leu

<210> 29

<211> 106

<212> PRT

<213> Gallus gallus

<400> 29

Asn Leu Pro Thr Val Asp Pro Ile Ala Val Cys His Glu Leu Tyr Asn
1 5 10 15

Thr Ile Arg Asp Tyr Lys Asp Glu Gln Gly Arg Leu Leu Cys Glu Leu
20 25 30

Phe Ile Arg Ala Pro Lys Arg Arg Asn Gln Pro Asp Tyr Tyr Glu Val
35 40 45

Val Ser Gln Pro Ile Asp Leu Met Lys Ile Gln Gln Lys Leu Lys Met
50 55 60

Glu Glu Tyr Asp Asp Val Asn Val Leu Thr Ala Asp Phe Gln Leu Leu

65

70

75

80

Phe Asn Asn Ala Lys Ala Tyr Tyr Lys Pro Asp Ser Pro Glu Tyr Lys
 85 90 95

Ala Ala Cys Lys Leu Trp Glu Leu Tyr Leu
 100 105

<210> 30

<211> 112

<212> PRT

<213> Gallus gallus

<400> 30

Ser Ser Pro Gly Tyr Leu Lys Glu Ile Leu Glu Gln Leu Leu Glu Ala
 1 5 10 15

Val Ala Val Ala Thr Asn Pro Ser Gly Arg Leu Ile Ser Glu Leu Phe
 20 25 30

Gln Lys Leu Pro Ser Lys Val Gln Tyr Pro Asp Tyr Tyr Ala Ile Ile
 35 40 45

Lys Glu Pro Ile Asp Leu Lys Thr Ile Ala Gln Arg Ile Gln Asn Gly
 50 55 60

Thr Tyr Lys Ser Ile His Ala Met Ala Lys Asp Ile Asp Leu Leu Ala
 65 70 75 80

Lys Asn Ala Lys Thr Tyr Asn Glu Pro Gly Ser Gln Val Phe Lys Asp
 85 90 95

Ala Asn Ala Ile Lys Lys Ile Phe Asn Met Lys Lys Ala Glu Ile Glu
 100 105 110

<210> 31

<211> 112

<212> PRT

<213> Gallus gallus

<400> 31

Thr Ser Phe Met Asp Thr Ser Asn Pro Leu Tyr Gln Leu Tyr Asp Thr
 1 5 10 15

Val Arg Ser Cys Arg Asn Asn Gln Gly Gln Leu Ile Ser Glu Pro Phe
20 25 30

Phe Gln Leu Pro Ser Lys Lys Lys Tyr Pro Asp Tyr Tyr Gln Gln Ile
35 40 45

Lys Thr Pro Ile Ser Leu Gln Gln Ile Arg Ala Lys Leu Lys Asn His
50 55 60

Glu Tyr Glu Thr Leu Asp Gln Leu Glu Ala Asp Leu Asn Leu Met Phe
65 70 75 80

Glu Asn Ala Lys Arg Tyr Asn Val Pro Asn Ser Ala Ile Tyr Lys Arg
85 90 95

Val Leu Lys Met Gln Gln Val Met Gln Ala Lys Lys Lys Glu Leu Ala
100 105 110

<210> 32

<211> 113

<212> PRT

<213> Gallus gallus

<400> 32

Ser Lys Lys Asn Met Arg Lys Gln Arg Met Lys Ile Leu Tyr Asn Ala
1 5 10 15

Val Leu Glu Ala Arg Glu Ser Gly Thr Gln Arg Arg Leu Cys Asp Leu
20 25 30

Phe Met Val Lys Pro Ser Lys Lys Asp Tyr Pro Asp Tyr Tyr Lys Ile
35 40 45

Ile Leu Glu Pro Met Asp Leu Lys Met Ile Glu His Asn Ile Arg Asn
50 55 60

Asp Lys Tyr Val Gly Glu Glu Ala Met Ile Asp Asp Met Lys Leu Met
65 70 75 80

Phe Arg Asn Ala Arg His Tyr Asn Glu Glu Gly Ser Gln Val Tyr Asn
85 90 95

Asp Ala His Met Leu Glu Lys Ile Leu Lys Glu Lys Arg Lys Glu Leu

100

105

110

Gly

<210> 33

<211> 115

<212> PRT

<213> Gallus gallus

<400> 33

Lys Lys Ser Lys Tyr Met Thr Pro Met Gln Gln Lys Leu Asn Glu Val
 1 5 10 15

Tyr Glu Ala Val Lys Asn Tyr Thr Asp Lys Arg Gly Arg Arg Leu Ser
 20 25 30

Ala Ile Phe Leu Arg Leu Pro Ser Arg Ser Glu Leu Pro Asp Tyr Tyr
 35 40 45

Ile Thr Ile Lys Lys Pro Val Asp Met Glu Lys Ile Arg Ser His Met
 50 55 60

Met Ala Asn Lys Tyr Gln Asp Ile Asp Ser Met Val Glu Asp Phe Val
 65 70 75 80

Met Met Phe Asn Asn Ala Cys Thr Tyr Asn Glu Pro Glu Ser Leu Ile
 85 90 95

Tyr Lys Asp Ala Leu Val Leu His Lys Val Leu Leu Glu Thr Arg Arg
 100 105 110

Glu Ile Glu
 115

<210> 34

<211> 112

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: Cited from
 Jeanmougin et al., Trends in Biochemical Sciences,
 22:151-153 (1997)

<400> 34

His	Asn	Ala	Pro	Phe	Asp	Lys	Thr	Lys	Phe	Asp	Glu	Val	Leu	Glu	Ala
1				5					10					15	
Leu	Val	Gly	Leu	Lys	Asp	Asn	Glu	Gly	Asn	Pro	Phe	Asp	Asp	Ile	Phe
			20					25					30		
Glu	Glu	Leu	Pro	Ser	Lys	Arg	Tyr	Phe	Pro	Asp	Tyr	Tyr	Gln	Ile	Ile
		35					40					45			
Gln	Lys	Pro	Ile	Cys	Tyr	Lys	Met	Met	Arg	Asn	Lys	Ala	Lys	Thr	Gly
	50					55					60				
Lys	Tyr	Leu	Ser	Met	Gly	Asp	Phe	Tyr	Asp	Asp	Ile	Arg	Leu	Met	Val
65					70					75				80	
Ser	Asn	Ala	Gln	Thr	Tyr	Asn	Met	Pro	Gly	Ser	Leu	Val	Tyr	Glu	Cys
				85					90					95	
Ser	Val	Leu	Ile	Ala	Asn	Thr	Ala	Asn	Ser	Leu	Glu	Ser	Lys	Asp	Gly
		100						105					110		

<210> 35

<211> 113

<212> PRT

<213> Unknown

<220>

<223> Description of Unknown Organism: Cited from
Jeanmougin et al., Trends in Biochemical Sciences,
22:151-153 (1997)

<400> 35

Gly	Thr	Asn	Glu	Ile	Asp	Val	Pro	Lys	Val	Ile	Gln	Asn	Ile	Leu	Asp
1				5					10					15	
Ala	Leu	His	Glu	Glu	Lys	Asp	Glu	Gln	Gly	Arg	Phe	Leu	Ile	Asp	Ile
			20					25					30		
Phe	Ile	Asp	Leu	Pro	Ser	Lys	Arg	Leu	Tyr	Pro	Asp	Tyr	Tyr	Glu	Ile
		35					40					45			
Ile	Lys	Ser	Pro	Met	Thr	Ile	Lys	Met	Leu	Glu	Lys	Arg	Phe	Lys	Lys
	50						55				60				

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100 105 110

Ser

<210> 36
<211> 113
<212> PRT
<213> Homo sapiens

<400> 36
Gly Thr Asn Glu Ile Asp Val Pro Lys Val Ile Gln Asn Ile Leu Asp
1 5 10 15

Ala Leu His Glu Glu Lys Asp Glu Gln Gly Arg Phe Leu Ile Asp Ile
20 25 30

Phe Ile Asp Leu Pro Ser Lys Arg Leu Tyr Pro Asp Tyr Tyr Glu Ile
35 40 45

Ile Lys Ser Pro Met Thr Ile Lys Met Leu Glu Lys Arg Phe Lys Lys
50 55 60

Gly Glu Tyr Thr Thr Leu Glu Ser Phe Val Lys Asp Leu Asn Gln Met
65 70 75 80

Phe Ile Asn Ala Lys Thr Tyr Asn Ala Pro Gly Ser Phe Val Tyr Glu
85 90 95

Asp Ala Glu Lys Leu Ser Gln Leu Ser Ser Ser Leu Ile Ser Ser Phe
100 105 110

Ser

<210> 37
<211> 114
<212> PRT
<213> Homo sapiens

<400> 37

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Leu Ile Tyr
85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100 105 110

Ile Glu

<210> 38

<211> 113

<212> PRT

<213> Gallus gallus

<400> 38

Ser Pro Asn Pro Pro Lys Leu Thr Lys Gln Met Asn Ala Ile Ile Asp
1 5 10 15

Thr Val Ile Asn Tyr Lys Asp Ser Ser Gly Arg Gln Leu Ser Glu Val
20 25 30

Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu Leu
35 40 45

Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg Asn
50 55 60

His Lys Tyr Arg Ser Leu Gly Asp Leu Glu Lys Asp Val Met Leu Leu
65 70 75 80

Cys His Asn Ala Gln Thr Phe Asn Leu Glu Gly Ser Gln Ile Tyr Glu
85 90 95

Asp Ser Ile Val Leu Gln Ser Val Phe Lys Ser Ala Arg Gln Lys Ile
100 105 110

Ala

<210> 39

<211> 114

<212> PRT

<213> Gallus gallus

<400> 39

Ser Pro Asn Pro Pro Asn Leu Thr Lys Lys Met Lys Lys Ile Val Asp
1 5 10 15

Ala Val Ile Lys Tyr Lys Asp Ser Ser Ser Gly Arg Gln Leu Ser Glu
20 25 30

Val Phe Ile Gln Leu Pro Ser Arg Lys Glu Leu Pro Glu Tyr Tyr Glu
35 40 45

Leu Ile Arg Lys Pro Val Asp Phe Lys Lys Ile Lys Glu Arg Ile Arg
50 55 60

Asn His Lys Tyr Arg Ser Leu Asn Asp Leu Glu Lys Asp Val Met Leu
65 70 75 80

Leu Cys Gln Asn Ala Gln Thr Phe Asn Leu Glu Val Ser Leu Ile Tyr
85 90 95

Glu Asp Ser Ile Val Leu Gln Ser Val Phe Thr Ser Val Arg Gln Lys
100 105 110

Ile Glu

<210> 40

<211> 105

<212> PRT

<213> Homo sapiens

<400> 40

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu

1	5	10	15
Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr			
20	25	30	
Asp Ser Thr Phe Ser Leu Asp Gln Pro Gly Gly Thr Leu Asp Leu Thr			
35	40	45	
Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser			
50	55	60	
Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn			
65	70	75	80
Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln			
85	90	95	
Arg Phe Phe Glu Thr Arg Met Asn Glu			
100	105		

<210> 41
 <211> 105
 <212> PRT
 <213> Mus musculus

<400> 41

Ala Lys Leu Ser Pro Ala Asn Gln Arg Lys Cys Glu Arg Val Leu Leu			
1	5	10	15
Ala Leu Phe Cys His Glu Pro Cys Arg Pro Leu His Gln Leu Ala Thr			
20	25	30	
Asp Ser Thr Phe Ser Met Glu Gln Pro Gly Gly Thr Leu Asp Leu Thr			
35	40	45	
Leu Ile Arg Ala Arg Leu Gln Glu Lys Leu Ser Pro Pro Tyr Ser Ser			
50	55	60	
Pro Gln Glu Phe Ala Gln Asp Val Gly Arg Met Phe Lys Gln Phe Asn			
65	70	75	80
Lys Leu Thr Glu Asp Lys Ala Asp Val Gln Ser Ile Ile Gly Leu Gln			
85	90	95	
Arg Phe Phe Glu Thr Arg Met Asn Asp			
100	105		

<210> 42
<211> 108
<212> PRT
<213> Mus sp.

<400> 42
Thr Lys Leu Thr Pro Ile Asp Lys Arg Lys Cys Glu Arg Leu Leu Leu
1 5 10 15
Phe Leu Tyr Cys His Glu Met Ser Leu Ala Phe Gln Asp Pro Val Pro
20 25 30
Leu Thr Val Pro Asp Tyr Tyr Lys Ile Ile Lys Asn Pro Met Asp Leu
35 40 45
Ser Thr Ile Lys Lys Arg Leu Gln Glu Asp Tyr Cys Met Tyr Thr Lys
50 55 60
Pro Glu Asp Phe Val Ala Asp Phe Arg Leu Ile Phe Gln Asn Cys Ala
65 70 75 80
Glu Phe Asn Glu Pro Asp Ser Glu Val Ala Asn Ala Gly Ile Lys Leu
85 90 95
Glu Ser Tyr Phe Glu Glu Leu Leu Lys Asn Leu Tyr
100 105

<210> 43
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: consensus

<220>
<221> VARIANT
<222> (1)
<223> It represents 2 amino acids. They can be any amino acids.

<220>
<221> VARIANT
<222> (3)
<223> It represents 2 to 3 amino acids. They can be any amino acids.

<220>
 <221> VARIANT
 <222> (5)
 <223> It represents 5 to 8 amino acids. They can be any amino acids.

<220>
 <221> VARIANT
 <222> (7)
 <223> It represents one amino acids. It can be any amino acid.

<220>
 <221> VARIANT
 <222> (10)
 <223> It represents 5 amino acids. They can be any amino acids.

<220>
 <221> VARIANT
 <222> (6)
 <223> It represents any amino acid from the group of: P, K, or H.

<220>
 <221> VARIANT
 <222> (9)
 <223> It represents any amino acid from the group of: Y, F, or H.

<220>
 <221> VARIANT
 <222> (12)
 <223> It represents any amino acid from the group of: M, I, or V.

<400> 43
 Xaa Phe Xaa Pro Xaa Xaa Xaa Tyr Xaa Xaa Pro Xaa Asp
 1 5 10

<210> 44
 <211> 20
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: consencus

<400> 44

Trp Pro Phe Met Glu Pro Val Lys Arg Thr Glu Ala Pro Gly Tyr Tyr
1 5 10 15

Glu Val Ile Arg
20